formed to have a diameter of between about 10 mm to about 50 mm, but they are not limited in size, number, or location.

Referring now to FIG. **8**A, the flexible film **830** (or flexible substrate) is fixed by clamps **820** on the support plate **810** having opening **810***a*. A deposition substance is supplied to the flexible film **830** from a deposition source **840** located in the lower section of the support plate **810**. The deposition substance is deposited on the flexible film **830** (or flexible substrate) through the opening **810***a* of the support plate **810**. Thereby, a thin film **850** is formed which corresponds to the size of the opening **810***a* on the flexible film **830** (or flexible substrate). The opening **810***a* serve to limit the deposition area of the thin film **850**. The deposition of the thin film **850** may be performed by using various methods such as, for example, sputtering, thermal deposition or chemical vapor deposition.

A donor film may be manufactured by using a film tray for fabricating flexible display as described herein. Donor film may be used when the thin film is formed by a laser-induced thermal imaging method. For example, donor film may be used when the organic emission layer of an OLED is formed. In this case, the base substrate **835** of the flexible donor films as shown in FIG. **8**B is transferred to a chamber (for example, to the deposition chamber) after the base substrate is fixed by clamps **820** and located in the lower section of the support plate **810**. The thin film **850** is formed in the base substrate **835** when supplied from the deposition source **840** located in the lower section of the base substrate **835**. A light to thermal conversion layer and thermal image layer may be formed as the thin film **850**. When the film tray is transferred to a chamber, a transferring robot(not shown) is used.

Referring to FIGS. **9**A to **9**D, to form an emission layer, donor film **950** is located on an accepter substrate **910** wherein an anode electrode **920**, a hole injection layer **930** and a hole transfer layer **940** are formed. The donor film **950** here includes a base substrate **950***a*, a light to thermal conversion layer **950***b* and a thermal image layer **950***c*. The base substrate **950***a* works as a support substrate to support the donor film **950** and is made from a high molecular substance, for example, PET and so on. Such base substrate **950***a* is fixed to prevent the donor film **950** from sagging.

A light to thermal conversion layer **950***b* includes a radiation absorber for converting the absorbed laser to thermal energy. Namely, the light to thermal conversion layer **950***b* absorbs the laser radiation and then converts it to thermal energy. Such a light to thermal conversion layer **950***b* may include infrared rays such as carbon black, black lead, infrared dyes, pigment within oxide and sulfide, and so on.

A thermal image layer **950***c* is manufactured as a coating of organic thin film and includes a light emitting layer. A small amount of a substance, for example, a dopant, may be added to improve various characteristics of the light emitting layer.

The donor film **950** may be placed in contact with an upper section of the combination of accepter substrate **910**, anode electrode **920**, hole pouring layer **930** and hole transferring layer **940**. Patterning may be performed after optionally irradiating the laser in the area where the emission layer is to be formed. The laser can reach the donor film **950** through openings **810***a* formed in the support plate **810** of the film tray for fabricating flexible display. (FIG. **9**B)

When the donor film **950** is removed from the accepter substrate **910**, the portion of the thermal image layers **950***c* which the laser contacted will adhere to the hole transfer layer **940** and then will be separated from the donor film **950**. (FIG. **9**C).

Thus, when the donor film **950** is removed from the accepter substrate **910**, the light emitting layer **960** is formed only in the portion of the acceptor substrate **910** which was contacted by the laser. (FIG. **9**D)

When a donor film **950** is manufactured by using the film tray for fabricating a flexible display shown in FIG. **8**B, the light to thermal conversion layer **950***b* and thermal image layer **950***c* may be formed on the base substrate **950***a* because the base substrate **950***a* remains flat even though it is flexible. Accordingly, it is possible to form a uniform light to thermal conversion layer **950***b* and thermal image layer **950***c* in the desired location on the base substrate **950***a*.

Also, when the emission layer is formed on a donor film **950** that is held flat by the film tray for fabricating flexible display as shown in FIG. **8**B, the possibility of misalignment is reduced.

FIGS. **10**A to **10**E show a film tray for fabricating a flexible display and its fixing method according to yet another embodiment of the present invention. The film tray **1100** of this embodiment may be used for a flexible substrate or a flexible film and includes a square-shaped support frame **1100***a*, substrate support section **1100***b* to secure the flexible film, and opening **1110** through which sputtering may be performed.

Such film tray **1100** is used to fix a flexible film **1200** adhered to an inflexible substrate **1300**, such as a glass substrate. The film tray **1100** may be manufactured from the same materials and in substantially the same manner as the film trays described above.

The flexible film **1200** may be adhered to an inflexible substrate **1300** in order to prevent the flexible film **1200** from sagging during transferring and deposition. (FIG. **10**C)

Then, the flexible film **1200** and the inflexible substrate **1300** are secured and settled within the film tray **1100**. The flexible film **1200** may be secured and settled within the substrate support section **1100***b* of the film tray. (FIGS. **10**D to **10**E).

Since the flexible film **1200** does not sag or bend when it is mounted on the film tray **1100**, it is possible to perform uniform sputtering and patterning of the thin film in the desired location on the flexible film **1200**.

According to the embodiments of the present invention as described above, a flexible substrate or flexible substrate, or film is able to be kept flat when a thin film is deposited onto the flexible substrate. Accordingly, it is possible to perform uniform sputtering and patterning in a desired location. Also, the flexible substrate or film can be conveniently transferred without deformation. Also, when a film tray for fabricating a flexible display of the present invention is used in a laser thermal image method using a donor film, the possibility of misalignment is reduced because the donor film can be kept flat.

What is claimed is:

1. A film tray for supporting a flexible medium during fabrication of a flexible display comprising:

a support plate; and

at least one pair of clamps, each clamp of the at least one pair of clamps being located at a perimeter of the support plate to fix a flexible medium, a first clamp of one of the at least one pair of clamps being aligned with a second clamp of the one of the at least one pair of clamps,

wherein each clamp of the at least one pair of clamps comprises:

an open-shut part adapted to pivotally open with respect to the support plate to receive the flexible medium and adapted to close to fix the flexible medium between the open-shut part and the support plate; and

a support part adjacent to and spaced from the open-shut part to provide a space to receive and support the